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sented by J. T. Willard. A description of a fossil tusk found in *Equus* beds was given by E. O. Dare. The nomenclature of the carboniferous, showing the most recent classification as adopted by the Kansas Geological Survey, was discussed by E. Haworth and J. Bennett. The use of a score-card for the comparison of natural waters with the use of a different rating for surface waters, deep wells and shallow wells was discussed by E. H. S. Bailey. "Some Preliminary Studies on the Moon" was the subject of a paper by F. A. Marlatt.

The retiring president, J. A. Yates, gave the presidential address on the "Value of the Work of the Scientist to Humanity."

E. H. S. BAILEY

THE PHILOSOPHICAL SOCIETY OF WASHINGTON

THE 640th meeting was held on December 7, 1907, Vice-president Bauer in the chair. In accordance with the by-laws of the society, the evening was devoted to hearing the president's address, which was delivered by Mr. John F. Hayford, on "The Earth, a Failing Structure."

The full text of this address will soon appear in Volume XV. of the *Bulletin of the Philosophical Society of Washington*.

The 37th annual meeting of the society was held on December 21, 1907, and was devoted to the presentation of the usual annual reports and the election of officers.

The following officers were duly elected for the ensuing year:

President—L. A. Bauer.

Vice-Presidents—A. L. Day, E. B. Rosa, C. K. Wead and C. G. Abbot.

Treasurer—B. R. Green.

Secretaries—G. K. Burgess, R. L. Faris.

General Committee—C. Adler, L. J. Briggs, E. Buckingham, W. A. DeCaindry, W. S. Eichelberger, E. G. Fischer, L. A. Fischer, R. A. Harris and P. G. Nutting.

R. L. FARIS,
Secretary

DISCUSSION AND CORRESPONDENCE

THE NOBEL PRIZES

TO THE EDITOR OF SCIENCE: Incorrect statements about the Nobel prizes and the sup-

posed misappropriation of certain parts of the Nobel funds crop up every year as regularly as the question of the awarding of the prizes. These discussions began several years ago both in scientific journals and in the daily press, especially in America. There seems to be an impression that American scientists and authors are being neglected by the institutions which are distributing the awards. Such an opinion was expressed, for instance, on page 50, Vol. XVI., of the *National Geographic Magazine*. It was stated in regard to the fact that up to that time (January, 1905) no American had received a prize, that "the reason is not lack of appreciation abroad of what we are doing in this country, but the neglect of Americans to apply for the prizes." This sentence was frequently quoted by daily papers, which ruminated the same old question, using in yellow-journal style the most vituperative language against the Scandinavian institutions which have to do with the awarding of the prizes. But the papers referred to omitted what is mentioned in the editorial note in the *National Geographic Magazine*. It is there said, "In the awarding of prizes only those persons are considered who are formally nominated as candidates by some institution, college or scientific society of rank and character."

The Nobel prizes are not applied for, and those having the nominating power are not confined chiefly to Swedes, as is claimed in an article in the January, 1907, number of *The Popular Science Monthly* (pp. 91-92). The statutes concerning the distribution of prizes give the right to nominate a candidate for the literary prize competition to "Members of the Swedish Academy and of the Academies in France and Spain, which are similar to it in constitution and purpose; members also of the humanistic classes of other academies and of those humanistic institutions and societies that are on the same footing as academies; and teachers of esthetics, literature and history at university colleges." This certainly gives the nominating power to others than Swedes, and probably America has the lion's share of persons with power to nominate candidates. The Swedish Academy has eighteen members, and

there are two or three other institutions in Sweden which "are on the same footing" as the academy, while the professors of literature, history and esthetics at Swedish universities do not number more than a dozen.

The nominating power for the medical prize lies with members of the medical faculties at the Caroline Medical Institute, Upsala and Lund universities in Sweden, Christiania University in Norway, Copenhagen University in Denmark, and Helsingfors in Finland, while members of at least six other medical faculties "selected in the way most appropriate of the just representation of the various countries," and in addition any number of scientists whom the staff of the Caroline Institute may see fit to select, are empowered to nominate candidates. It does not seem that the charge of the writer in *The Popular Science Monthly* is just. In regard to the scientific prizes the right to nominate candidates belongs to "home and foreign members of the Royal Academy of Science in Stockholm, members of the Nobel Committees of the physical and chemical sections of the Nobel foundation, scientists who have received a Nobel prize, professors of physics and chemistry at the universities above referred to, as well as at the Royal Technical College in Stockholm, and professors of the same sciences at at least six other universities, as well as other scientists to be selected by the Academy of Science of Stockholm. Also in this case by far the smaller number of persons with right to nominate are Swedes.

The article in *The Popular Science Monthly* referred to also says that as Nobel's "large fortune was made in Great Britain by the discovery and manufacture of dynamite, it seems likely that the instructions of his will would have been more adequately carried out if their execution had been entrusted to the Royal Society and the British courts." Of all the charges made in regard to the Nobel prizes this is certainly one of the most extravagant. Nobel's will directs that "the prizes for physics and chemistry shall be awarded by the Swedish Academy of Science in Stockholm; the one for physiology or medicine by the Caroline Medical Institute in Stockholm; the prize for literature by the academy in Stock-

holm (Svenska Akademien), and that for peace by a committee of five persons to be elected by the Norwegian Storting." It is difficult to see the reason why the Royal Society or the British courts should have been entrusted with the execution of the will, which particularly mentions the institutions in whose power the distribution of the prizes is placed.

That the instructions of the will "would have been more adequately carried out" by the Royal Society is a statement which, I am sure, no fellow of that august institution would ever claim.

The writer in *The Popular Science Monthly* further says that "it is truly sad and discouraging that there should be lack of good faith in the administration of a fund intended, as the testator states, 'to benefit mankind.'" His further charge that "the prizes have so far been awarded annually, but it is to be feared that when the money is needed in Sweden, it will be kept there," is as slanderous as it is undignified.

In an editorial in the same journal (Vol. 58, pp. 107-108) for November, 1900, it is also stated that

Nobel's intentions have not been exactly carried out; the chief deviations being that part of the money is used for the establishment of certain Nobel institutes, the objects of which are not exactly defined. . . . Any attempt to divert the funds to the encouragement of the local institutions or to the education of inferior men should be carefully guarded against. Nobel's will explicitly ordered that the money be awarded in prizes for eminence and without any consideration of nationality.

If the writers of these articles referred to and all those others who appoint themselves judges in regard to this question had taken the trouble to inquire about the actual cause of the apparent "violations" of Nobel's will, they would have found that the executors of the will appointed by the testator were men who knew him intimately, and subsequently acted in full accordance with the wishes expressed by the testator during his lifetime.

Nobel was a patriot as good as any one, and although his main object was in the interest of mankind generally, his second thought was

his own country, and it is well known that he left the distribution of the prizes with certain Swedish institutions for the express purpose of putting Sweden in closer contact with the great scientific, literary and peace movements of the rest of the world.

As for the right of the executors to change the stipulations of the will there are several points to be taken into consideration. The will was very general in its wording, and all who have had to execute a general order of any kind know that when coming down to the details the exact directions given often have to be somewhat modified. In this special case there are many instances where the actual provisions of the will are not only difficult, but impossible to carry out. The testator directed that prizes be awarded to "those persons who shall have contributed most materially to benefit mankind during the year immediately preceding." This may seem very easy to accomplish, but as a matter of fact, very few discoveries of any importance have been immediately acknowledged. Let us say that an investigator within the province of medicine makes a discovery this year, which he himself and probably some of his friends would recognize as a valuable and epoch-making discovery of the greatest "benefit to mankind." But it is not very likely that the medical world in general would immediately accept the discovery as correct or acknowledge its superiority above anything else done the same year. This would not be in accordance with the scientific spirit to investigate thoroughly before accepting a statement as truth. Nor could it be expected that any scientific body in the world could be ready to immediately pronounce this discovery as the greatest accomplishment during the year. In no single case where Nobel prizes have been awarded has the work on which the award was based been recognized as a great work during the same year. All those critics who are so ready to offer their advice in regard to the execution of Nobel's will apparently do not realize that the exact words of the will are impossible to follow literally in practise. It is most difficult to fix the exact date for an important discovery. Moreover, the author

may not be able to publish and prove his discovery within a year's time, and if the provisions of the will were to be taken literally, a discovery made in 1905 but published in 1907 would be disqualified for competition in 1909, the year in which it was ascertained that the discovery was really of great "benefit to mankind." Such an interpretation would be ridiculous, but it is really what many of the critics claim as the only right one.

In the execution of Nobel's last will it has also been found necessary to provide that:

If it be deemed that not one of the works under examination attains to the standard of excellence required, the sum allotted for the prize or prizes shall be withheld until the ensuing year. Should it even then be found impossible, on the same grounds, to make any award, the amount in question shall be added to the main fund, unless three fourths of those engaged in making the award determine that it shall be set aside to form a special fund for that one of the five sections, as defined by the will, for which the amount was originally intended. The proceeds of any and every such fund may be employed, subject to the approval of the adjudicators, to promote the objects which the testator ultimately had in view in making his bequest, in other ways than by means of prizes.

This is often objected to as "illegal," "in direct violation of the provisions of the will," etc. Any one who cares to reflect over the proviso in the will that the prizes be given annually will find that this latter may not always be possible. In the constant stream of literature appearing each year it may be found that no work can be singled out for its excellence or considered worth a prize of about \$40,000. What would these practical, well-meaning critics do in such a case? Award at all events. It is very doubtful if such a course would be to the "benefit of mankind" or in accordance with the general tendency of the testator's will.

Professor Svante Arrhenius, of Stockholm, wrote me in regard to this question, a letter dated May 28, 1905, and I give here a translation of some extracts:

It can hardly be said that any violation of Nobel's will has been committed. The will is so briefly worded, that it could hardly serve as a

foundation for the distribution of the prizes without explanatory additions. On account of the Utopian form of the will some of Nobel's heirs commenced a lawsuit against the institutions which Nobel had appointed as distributors of the prizes. Rather than lose a part of the funds in a lawsuit, which could be prolonged for an uncertain length of time, the said institutions decided to compromise with the heirs, and to interpret the will by the statutes which were drawn up by a committee, in which the said institutions and the heirs were represented, and which statutes were later approved by the government. All these parties were interested in reaching as far as possible the aims which Dr. Nobel had intended by his will. In this regard the committee in question naturally had much better knowledge of the facts than the testator.

It was then acknowledged that it was impossible to award the prize "to the person who shall have contributed most materially to benefit mankind during the year immediately preceding." The great inventions, especially the theoretical ones, are generally not of such a nature that their value is acknowledged immediately after their publication. It was therefore decided to change "preceding year" to "late times." I can not see that this is a "violation" of the idea of the will. I also think I can say that the authorities who have the execution of the will in their hands have exercised great care not to award prizes for discoveries which have been made a very long time ago, although many proposals to this effect have been presented. The said institutions further agreed that one tenth of the proceeds should annually be added to the main fund in order to prevent a decrease in the amount of the prizes on account of any future lowering of the money value or the rate of interest. Finally these institutions considered that the amounts, which could be set apart for defraying of expenses connected with the judging of the proposals submitted, should primarily be used for the establishment of Nobel Institutes, the purpose of which is to promote in other ways the aims of the will. By this arrangement the prizes have decreased (by 25 per cent.), but I have not yet heard any prize winner criticize this. Whether the recipient of a prize receives \$40,000, as is now the case, or \$52,000 is rather unimportant. The indirect result of the prizes is the greatest. It may also be pointed out that the distributors of the prizes have shown great impartiality in following the testators wishes, that Scandinavians should not have any preference before others. . . . This fall (1905) a Nobel Insti-

tute in physical chemistry is to be established. The annual expenditure for this (including rents, etc.) is only \$4,400. I have been elected chief of this institute, and I expect to be able to promote the aims of the will more in this capacity than on account of the fact that I shall have received a Nobel prize.

As Professor Arrhenius says, an adjustment of interests was amicably entered into to prevent the possible loss of a considerable amount of the funds by a long lawsuit, and in the deed of adjustment it was affirmed and declared by the testator's heirs, that:

By these presents we do acknowledge and accept Dr. Nobel's Will, and entirely and under all circumstances relinquish every claim for ourselves and our posterity to the late Dr. Nobel's remaining property, and to all participation in the administration of the same, and also to the possession of any right on our part to urge any criticism upon the elucidations of, or additions to the said Will, or upon any other prescriptions with regard to the carrying out of the Will or the uses to which the means accruing from the bequest are put, which may either now or at some future time be imposed for observance by the Crown or by those who are thereto entitled:

Subject, nevertheless, to the following express provisos:

(a) That the Code of Statutes which is to serve in common as a guide for all the corporations appointed to award prizes, and is to determine the manner and the conditions of the distribution of prizes appointed in the said Will, shall be drawn up in consultation with a representative nominated by Robert Nobel's family, and shall be submitted to the consideration of the King;

(b) That deviations from the following leading principles shall not occur, viz.:

That each of the annual prizes founded by the said Will shall be awarded at least once during each ensuing five-year period, the first of the periods to run from and with the year next following that in which the Nobel-Foundation comes into force, and

That every amount so distributed in prizes in each section shall under no consideration be less than sixty (60) per cent. of that portion of the annual interest that shall be available for the award, nor shall the amount be apportioned to more than a maximum of three (3) prizes.

In an article reproduced in *SCIENCE* for August 16, 1907, it is said in regard to the use

of certain parts of the income for the purpose of ascertaining that the prizes are worthily awarded:

This might be justifiable if the money were spent for this purpose. If the committees used the laboratories and libraries they have established out of the Nobel fund for the purpose of testing the real value of alleged inventions it would do much to promote science and assist in the discovery of struggling genius. But no man is allowed to present his own claims. He must first have the endorsement of scholars occupying certain narrowly specified official positions in his own land.

It would be interesting to know how much the writer of this article referred to knows about the work done at the Nobel Institutes, whether this is done for the purpose indicated or not. It is evident how impractical it would be if each man presented his own claims to a discovery, and the committee on awards had to test in each case the actual value of the claims. It would be equally interesting to know what method of selection the writer of the article referred to would suggest. To persons with ordinary intelligence it seems fairly evident that the foremost specialists in each country are the best judges as to discoveries in their own line, let it be that these specialists may occupy "certain narrowly specified official positions" only, and do not represent the general public. A popular vote would hardly be the correct method for judging the value of scientific discoveries or achievements in literature.

It must be remembered in regard to the Nobel Institutes that they are not by any means reserved for Swedes, as is often claimed. Paragraph 12 of the Code of Statutes provides that "the adjudicating corporations are at liberty to appoint foreigners, either men or women, to positions at the Nobel Institutes." Of the more than thirty prizes so far distributed only one has been awarded a Swede, and there is no man who could raise any objection in that case. One prize has been given a Norwegian, and this was done not on account of love or relationship, as any one conversant with Scandinavian politics can testify. One prize was awarded a Dane, whose discovery was generally recognized as fully merit-

ing this encouragement. All the other prize-winners have been non-Scandinavians. One American has received a prize so far, and it was not given him on account of nationality, but for his personal accomplishments in the line in which he received a prize.¹

It can not rightly be claimed that parts of the Nobel funds have been diverted for local purposes, as the institutes are in every way of the most international nature, as all science should be. When the writer in *The Popular Science Monthly* makes the statement that the Nobel Institutes "have been founded in dishonor" he is going too far, and by such an unverified accusation he certainly does himself no credit.

I have repeatedly been approached by countrymen on this side of the Atlantic to reply to some of these attempts at discrediting not only our foremost Swedish scientific institutions, but the Swedish government and nation which have sanctioned the actions of the administrators of the Nobel Fund. I have hesitated to do so, but a recent letter received from a university in the United States brought up the question again, and the new awards of prizes that will be made to-day, on the anniversary of the death of Dr. Alfred Nobel, will probably cause a renewed outburst of comments from newspapers and others. It is well that at least American scientists hear the other view of this question.

PEHR OLSSON-SEFFER

MEXICO CITY,
December 10, 1907

UNIVERSITY REGISTRATION

TO THE EDITOR OF SCIENCE: In connection with the university registration statistics published in the issue of November 29, I wish to call your attention to the following corrections:

The students of the University of California credited to commerce and architecture constitute a group of students who at other insti-

¹ The recent award of the prize in physics to Professor A. A. Michelson, of Chicago, is further evidence that those concerned in the distribution of the prizes are recognizing true merit, without considering nationality.—P. O.-S.